

FY2005 as of July 2004

Fort Indiantown Gap Training Site

Installation Action Plan



Printed on Recycled Paper

FY2005

**Fort Indiantown Gap Training
Site**

Installation Action Plan

Printed July 2004

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

The IRP is specifically focused at contamination resulting from past activities, and is funded by the centrally-managed Environmental Restoration, Army (ER,A) budget account. Cleanup activities directed at contamination primarily resulting from current operations are separately funded and managed, and, although mentioned where relevant, will not generally be discussed in detail in an IAP.

In an effort to coordinate planning information between the IRP manager, AEC, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Fort Indiantown Gap Training Site (FIG). The IAP is used to track requirements, schedules and budgets for all major Army installation restoration programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change. Under current project funding, all remedies will be in place at FIG by the end of 2007.

Acronyms & Abbreviations

AASF	Army Aviation Support Facility
ACT 2	PA DEP Land Recycling and Environmental Remediation Standards Act
AEDB-R	Army Environmental Database - Restoration (formerly called DSERTS)
AOC	Area of Concern
AOI	Area of Interest
AQ-ERM	Aquatic Life Effects Range Median
BRAC	Base Realignment and Closure
CRP	Community Relations Plan
CTC	Cost to Complete
cy	cubic yards
DA	Department of Army
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
EBS	Environmental Baseline Study
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army
ERI	Environmental Research Inc.
ERM	Effects Range Median
FIG	Fort Indiantown Gap
FS	Feasibility Study
ft	foot
FY	Fiscal Year
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	\$1,000
kg	kilograms
LTM	Long-term Monitoring or Management
MD	Maryland
mg	milligrams
MSC	Medium-specific Concentration
NE	Not Evaluated
NFA	No Further Action
NGB	National Guard Bureau
NPL	National Priorities List
PA	Preliminary Assessment or Pennsylvania
PADEP	Pennsylvania Department of Environmental Protection
PADMVA	Pennsylvania Department of Military and Veteran Affairs
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated biphenyls
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RBC	Risk-based Concentration
RC	Response Complete
RD	Remedial Design
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place

Acronyms & Abbreviations

RRSE	Relative Risk Site Evaluation
SI	Site Inspection
SVOC	Semi-Volatile Organic Compounds
ug/kg	micrograms per kilogram
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine (formerly called USAEHA)
USAEC	United States Army Environmental Center (formerly called USATHMA)
VOC	Volatile Organic Compound

STATUS:	<ul style="list-style-type: none">- The Former Incinerator site, Army Aviation Support Facility (AASF) outfall and Former Staging area are non-NPL sites; Pennsylvania Department of Environmental Protection (PADEP) is the lead regulatory agency.- The final Site Inspection Report was sent to PADEP and PA Department of Military and Veterans Affairs (PADMVA).- The final planning documents for the investigation and removal actions have been sent to PADEP and PADMVA.		
TOTAL # OF AEDB-R SITES:	3 -- 2 active sites; 1 response complete site		
DIFFERENT SITE TYPES:	2 Contaminated Sediments	1 Incinerator	
CONTAMINANTS OF CONCERN:	Metals (lead and silver), PAHs, and pesticides		
MEDIA OF CONCERN:	Soil and possibly shallow groundwater		
COMPLETED REM/IRA/RA:	None to date.		
CURRENT IRP PHASES:	RI/FS: 1 site RA(C): 1 site		
PROJECTED IRP PHASES:	RD: 1 site RA(C): 2 sites LTM: 1 site		
IDENTIFIED POSSIBLE REM/IRA/RA:	RA at 2 sites		
DURATION:	Year of IRP inception:	1999	
	Year of RA completion:	2007	
	Year of IRP completion:	2011	

Installation Information

LOCALE: Fort Indiantown Gap is located in south-central Pennsylvania in Lebanon and Dauphin Counties. The site consists of approximately 17,100 acres and is operated by the PADMVA. PADMVA accepted operational control of all areas of concern (AOCs) under the 1995 Base Realignment and Closure (BRAC) effective 1 October 1998. As a result of this acceptance, all AOCs were added to and became part of the Fort Indiantown Gap's "premises."

IRP EXECUTING AGENCIES: Army Environmental Center, Aberdeen Proving Ground, MD for National Guard Bureau, Army Directorate

REGULATORY PARTICIPATION: **State:** Pennsylvania Department of Environmental Protection (PADEP)
Federal: United States Environmental Protection Agency (EPA)

REGULATORY STATUS:

- The Former Incinerator site, AASF outfall, and Former Staging area, Fort Indiantown Gap are non-NPL sites; PADEP is lead regulatory agency.
- The final Site Inspection Report has been sent to PADEP and PADMVA.
- The final planning documents for the investigation and removal actions have been sent to PADEP and PADMVA.

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

- Investigation and removal actions are underway.

Installation Description

CURRENT

Fort Indiantown Gap is an active training facility, currently used as a headquarters for PADMVA. PADMVA accepted operational control of all AOCs under the 1995 BRAC effective 1 October 1998. As a result of this acceptance, all AOCs were added to and became part of the Fort Indiantown Gap “premises.”

HISTORICAL

The DA BRAC office supplied funding for the characterization of the AOCs identified on the draft AOC list. The characterization consisted of the preliminary assessment (PA), site inspection (SI), photo interpretation survey, and radiation closeout survey at Fort Indiantown Gap.

A draft list of AOCs was developed in 1999. The list is based on the environmental baseline survey (EBS) dated 1998, as supplemented by review of installation and regulator environmental files, and a historical aerial photograph study dated 1995.

The BRAC office agreed to fund characterization of the AOCs. The characterization was conducted through a PA and SI. The PA was completed in 1998. A total of 287 PA sites were identified and evaluated. There were 24 sites continued into the SI phase of work. The Phase 1 SI fieldwork was completed in June 1999. The second Phase (1a) SI fieldwork was completed in July 1999. The final SI report was completed in October 2001.

A historical aerial photographic analysis of the entire facility was conducted in 1995. Environmental Research Inc. (ERI) was the contractor that conducted the fence-to-fence historical aerial photographic analysis of Fort Indiantown Gap. Twenty-four suspect areas were identified. Site visits were conducted by National Guard Bureau (NGB), PADMVA, United States Environmental Protection Agency (EPA) and PADEP at all of these areas and three were carried forward for further investigation. No additional sites were identified through the historical aerial photographic analysis. The historical aerial photographic analysis was also used to identify likely locations to sample at existing AOCs on the draft AOC list.

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) conducted a site inspection and compiled their findings in a draft report dated 8 April 1999.

The SI addressed the portion of Fort Indiantown Gap in the cantonment area that is operated by the PADMVA. Sampling and analysis were performed at sites recommended for further investigation in the Final PA Report and other sites agreed to by PADMVA, NGB, EPA, and PADEP. The purpose of the SI process is to determine if sites recommended for further investigation during the PA contain hazardous substances at concentrations that pose a potential threat to human health and the environment. The Fort Indiantown Gap SI was biased toward investigation of areas with the greatest likelihood of contamination. Targeted sampling of potentially affected media was performed at these sites to determine if the sites could be granted “no further action” (NFA) status, or if additional investigation was warranted.

The following conclusions were developed, based on the results of the SI:

- In general, the sites indicated little evidence of environmental impacts from historical use.
- Based on the human health screening performed, only one site, the Former Incinerator site, exhibited unacceptable risk under industrial and residential exposure scenarios.

At this site, the risk was driven by the presence of metals (e.g., lead or silver). Although not currently used for residential purposes, the site is located in a residential area.

Both the Former Incinerator site and the Former Staging area exhibit unacceptable ecological risks.

- Metal constituents in the soil and sediments caused most of the exceedances of human health and ecological benchmarks. With the exception of lead and silver, other reported metal concentrations, while exceeding benchmark values, were generally representative of background conditions already established for the BRAC excess

Installation Description

area.

Based on the conclusions presented above, NFA was recommended for all but the following sites and specific recommended actions for these sites are described below.

Former Incinerator site (FIG-01). During the SI, elevated levels of metals were found in soil samples. Lead was detected at concentrations ranging from 1,204 mg/kg to 7,817 mg/kg, far above the PADEP medium-specific concentration (MSC) of 450 mg/kg for industrial areas. Silver was detected in sediments at levels ranging from 6.8 to 10 mg/kg, exceeding the aquatic life effects range median (AQ-ERM) of 3.7 mg/kg. No VOCs, PCBs, SVOCs, dioxins or furans were detected at levels exceeding the PA MSC or AQ ERM values.

A removal action to eliminate the contaminated ash and soils is planned. To prevent trespass by the public, a temporary fence will be erected around the site and removed on completion of the remedial action. The ash and contaminated soil will be removed. Clean fill will be placed only in sufficient quantities to return the land to the natural grade. Soil stabilization with ground cover is to be put in place. Monitoring wells will be installed and samples taken for eight quarters to ensure the contamination has not impacted groundwater. After confirmatory sampling of soil, sediments, and groundwater reveals that all contamination has been remediated, the monitoring wells will be abandoned and the site closed. The site is located along a public road in a residential area. Use of industrial standards for remediation is not recommended due to the location, current residential encroachment to the property, and the strong potential for the site to be expropriated and transferred to the public.

Former Staging area (FIG-02). During the SI, elevated levels of metals were found in sediment samples. Silver was detected at concentrations ranging from 7.2 to 9.3 mg/kg, which are below the PA MSC but above the AQ-ERM. The sediment samples also contained pesticides 4,4'-dichlorodiphenyldichloroethylene (4,4'-DDE), 4,4'-dichlorodiphenyltrichloroethane(4,4'-DDT), and Dieldrin. The 4,4'-DDE was detected at concentrations ranging from 67 – 230 ug/kg which is above the AQ-ERM level of 27 ug/kg. The 4,4'-DDT was detected at concentrations ranging from 67 – 300 ug/kg which is above the AQ-ERM level of 27 ug/kg. The Dieldrin was detected at in one specimen at 160 ug/kg, which is above the AQ-ERM level of 110 ug/kg. No VOCs, PCBs, SVOCs, dioxins or furans were detected at levels exceeding the PA MSC or AQ ERM values.

A remedial investigation with a baseline risk assessment is planned to determine the depth and breadth of any pesticide and/or metal contamination. Groundwater monitoring wells will be installed and sampled for eight quarters. Further action will be determined based on the findings of the remedial investigation. The area is currently with the FIG enclave. Future land use for the site includes a training center for the Pennsylvania Air National Guard with dormitory rooms and classrooms.

Army Aviation Support Facility Outfall site (FIG-03). This site was determined to be ineligible for ER,A funding due to its active status.

REGULATORY STATUS

- PADEP is the lead regulatory agency.
- Fort Indiantown Gap is a non-NPL facility.

Contamination Assessment

Fort Indiantown Gap (FIG), located in south-central Pennsylvania, is owned and operated by the PADMVA. Prior to the BRAC of 1995, the US Army maintained the facility. As part of the agreement for the Army to turning the property over to the Commonwealth of Pennsylvania, the National Guard Bureau (NGB) agreed to remediate all sites on the installation where former Army activities may have impacted the environment and where the sites are eligible for Environmental Restoration, Army (ER,A) funds.

The Former Incinerator site (FIG-01), which was operated from 1937 to 1951, is located on the eastern side of Coulter Road. There are currently no barriers in place to restrict access/trespassers. It is believed that the former incinerator was used to destroy paper documents and medical waste. All that remains of the former structure is the concrete foundation, a few concrete piers and a portion of the walls. A concrete sump/culvert with exposed pipes is located at the toe of the ash pile slope, and appears to be have been connected to the incinerator structure. Once the waste materials were incinerated, the ash was deposited at the rear of the building, towards the creek. The ash slopes from the rear of the former building, approximately 12 feet above grade, to the bed of the creek. The deposited ash is visibly different than the native soils.

A Site Inspection (SI) was completed at the incinerator site in 2001 by Ogden Environmental and Energy Services Company, Inc. for the NGB. The results of the inspection show that the ash contains concentrations of lead which exceed PADEP cleanup standards. Small amounts of silver were also detected in the creek, but may be the result of the high background levels of silver seen in the area. Recently, the utility company installed power lines through the site. It appears that during that process, a portion of the ash pile was re-graded to improve vehicle access.

A stormwater outfall site located near the Army Aviation Support Facility (AASF) receives runoff from aircraft runways and maintenance buildings. The AASF lies south of Range Road in the northern part of the cantonment area. A SI was completed in 1999 by USACHPPM. The storm drain receives excess flow from a washrack, floor drains in Building 101 (an aircraft maintenance hangar), and a battery room sink, via an oil/water separator. Wastes potentially associated with the oil/water separator discharge include solvents, metals, and oily wastes. Discharge from the outfall follows a grassed swale before entering Vesle Run. Two soil samples were collected from the swale and were analyzed for heavy metals and semi-volatile organic compounds (SVOCs). Soil testing showed elevated levels of polynuclear aromatic hydrocarbons (PAHs). Metal concentrations were below EPA Region 3 Risk-based Concentrations (RBCs) (industrial). It is estimated that up to 20 cy of soil, approximately 2-ft deep, contains elevated levels of these compounds in the area of the outfall. Due to the active use of the runways and maintenance buildings, this site was determined to be ineligible for ER,A funding.

The Former Staging Area (FIG-02) is a flat, cleared area on the northeast corner of Adams and Cumberland Streets (approximately 285 x 240 ft = 1.5 acres) within the Fort Indiantown Gap enclave. The site is the area bounded by Cumberland St. on the north, Adams St. on the east, Harrisburg St. on the west, and O'Neil St. on the south and extending downgradient along the creek east of Adams St. A storage bin, formerly located adjacent to the site, was used as an uncovered staging area for coal, potentially contaminated soil, soil drums, and other materials. While there is no suspected release of contaminants to the air, lack of containment of the runoff of these materials may have adversely affected the soil downgradient of the site. A pesticide handling building was formerly located at the AOI. A SI was completed at Former Staging Area in 2001. Sediment samples were collected from a creek adjacent and downgradient to the Former Staging Area. With the exception of the four following analytes, media sample results were below their respective cleanup criteria. The three sediment samples were higher than the cleanup criteria for Silver (7.2-9.3 mg/kg vs. 3.7 mg/kg standard), 4, 4'-DDT (67-300 ug/kg vs. 27 ug/kg standard), and 4, 4'-DDE (67-230 ug/kg vs. 27 ug/kg standard). In addition, the clean up standard of 110 ug/kg for Dieldrin was exceeded in one sediment sample.

Previous Studies

	Title	AUTHOR	DATE
1	Aerial Photographic Site Analysis	Environmental Research, Inc.	1994
2	Preliminary Assessment Report	Engineering Technologies Associates	Jun-94
3	Final Site Inspection Work Plan	Ogden Environmental and Energy Services Co., Inc.	Jun-00
4	Final Site Inspection Report No. 38-EH-7358-99	US Army Center for Health Promotion and Preventive Medicine	Apr-99
5	Final Site Inspection Report	Ogden Environmental and Energy Services Co., Inc.	Oct-01
6	Final Work Plan for Investigation and Removal Activities -Former Incineration Site, Former Staging Area, and Outfall Site	Weston Solutions	May-04
7	Final Quality Assurance Project Plan Environmental Analytical Services to Support Investigation and Removal Activities -Former Incineration Site, Former Staging Area, and Outfall Site	Weston Solutions	May-04
8	Final Community Relations Plan for Investigation and Removal Activities -Former Incineration Site	Weston Solutions	May-04
9	Final HTRW Program, Accident Prevention Plan and Site-Specific Safety and Health Plan, Investigation and Removal Activities -Former Incineration Site, Former Staging Area, and Outfall Site	Weston Solutions	May-04

FORT INDIANTOWN GAP

ER,A Eligible AEDB-R Sites

FIG-01 FORMER INCINERATOR

SITE DESCRIPTION

The former incinerator site is located on the eastern side of Coulter Road northeast of the Waste Water Treatment Plant. The incinerator operated from ~1937 to 1951. Some of the incinerator ash was deposited behind the former incinerator building as fill. Downslope of this fill area is a wetland. This site is open to public encroachment. At this site, metals (lead and silver) were reported at elevated concentrations in surface soils. Concentrations of lead have been detected up to 7,618 mg/kg. These concentrations exceeded human health and ecological risk benchmark values and could not be attributed to background levels.

STATUS

RRSE RATING:

High

CONTAMINANTS:

Metals

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA/SI, RD

CURRENT IRP PHASE:

RA(C) (funded)

FUTURE IRP PHASE:

RC

PROPOSED PLAN

The area is fenced for the remediation activities. The contaminated soil (1,700 cy) will be removed and disposed of at an approved off-site disposal or reclamation area, followed by appropriate backfill and stabilization. Confirmatory sampling will be completed after the soil removal. Six GW monitoring wells will be installed and sampled on a quarterly basis for four to eight quarters.

FIG-02 FORMER STAGING AREA

SITE DESCRIPTION

Two pesticide and herbicide handling buildings (demolished in 2002) were formerly located adjacent to a former coal storage bin. A concrete slab (removed in 2002) was subsequently used to stage contaminated soil prior to disposal. At this site, pesticides (DDT, DDE, Dieldrin) and metals (silver) were detected in a drainage swale at elevated concentrations in sediments downgradient from both sites. These concentrations exceeded human health and ecological risk benchmark values and could not be attributed to background levels.

PROPOSED PLAN

Remedial investigation is underway to determine if soil, sediments, and/or groundwater has been impacted.

STATUS

RRSE RATING:

Low

CONTAMINANTS:

Pesticides, Metals

MEDIA OF CONCERN:

Soil, Sediments

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RI/FS (funded)

FUTURE IRP PHASE:

RD, RA, LTM

FORT INDIANTOWN GAP

Non ER,A Eligible AEDB-R Sites

FIG-03 AASF OUTFALL

SITE DESCRIPTION

At the Army Aviation Support Facility (AASF) Outfall site, several PAHs were detected at elevated concentrations in surface soils. These concentrations exceeded human health and ecological risk benchmark values and could not be attributed to background levels. Therefore, a limited soil removal is recommended in the area.

PROPOSED PLAN

This site has been determined to not be eligible for ER,A funding due to the active status of the Aviation Support Facilities.

STATUS

RRSE RATING:

Medium

CONTAMINANTS:

PAHs

MEDIA OF CONCERN:

Soil, Groundwater

COMPLETED IRP PHASE:

PA/SI

CURRENT IRP PHASE:

RC

PAST MILESTONES

START DATE OF IRP AT INSTALLATION:			1997
PA	Initiation-Completion:		1997-2000
SI	Initiation-Completion:		2000-2003

PROJECTED MILESTONES

RD	Initiation-Completion		2003-2004
RA	Initiation-Completion		2004-2007
LTM	Initiation-Completion		2008-2011

NO FURTHER ACTION SITES

FIG-03 AASF OUTFALL

Remediation Activities

Complete REM/IRA/RA

None

Current REM/IRA/RA

None

Future REM/IRA/RA

RA	Initiation-Completion	2004-2007
LTM	Initiation-Completion	2008-2011

Community Involvement

RESTORATION ADVISORY BOARD (RAB) STATUS

A RAB was established during the Active Army Component remediation efforts prior to the turn over of FIG to the PADMVA. The RAB was disbanded at the departure of the Active Army Component, as all remedial actions were complete.

A community relations plan (CRP) is a component of the scope of work for all remediation work completed at FIG. After contract award, the CRP was developed and the need for a RAB determined. A RAB is not necessary at this time due to not enough community interest and not deemed necessary by the installation commander. In addition, the PA DEP Land Recycling and Environmental Remediation Standards Act (Act 2) contains specific public notice requirements that must be followed to receive site closure under Act 2. Remediation at the Former Incinerator site is to be completed to qualify for Act 2 closure. The contractor will be required to complete all public notice requirements outlined in the CRP and Act 2.